



Opto Plus LED Corp.
0.76" 8 X 8 Dot Matrix SMD Type LED Display
OPS-M28810SY | OPS-M28811SY

● **EDIT HISTORY**

Version A: Dec. 21, 2020

Preliminary Spec.



Opto Plus LED Corp.

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● FEATURES

- 0.76 inch (19.40 mm) matrix height.
- Stackable vertically and horizontally.
- 8X8 array with X-Y select.
- SMD type.
- Wide viewing angle.
- RoHS compliant, Pb Free.

● DESCRIPTION

The device are 0.76 inch (19.40 mm) height 8X8 dot matrix display.

The device is Opto Plus LED Corp standard LED Display.

This device utilizes Super Bright Yellow LED chip which are made from AlGaInP

On a transparent GaAs, substrate.

The device has face and dot option, please refer to **PRODUCT APPEARANCE**.

● DEVICE

| PART NO. | DESCRIPTION |
|-----------------|--|
| OPS-M28810SY-GW | Anode Column, Cathode Row Gray face White dot |
| OPS-M28811SY-GW | Cathode Column, Anode Row Gray face White dot |
| OPS-M28810SY-BW | Anode Column, Cathode Row Black face White dot |
| OPS-M28811SY-BW | Cathode Column, Anode Row Black face White dot |

RoHS Compliance



Pb Free.



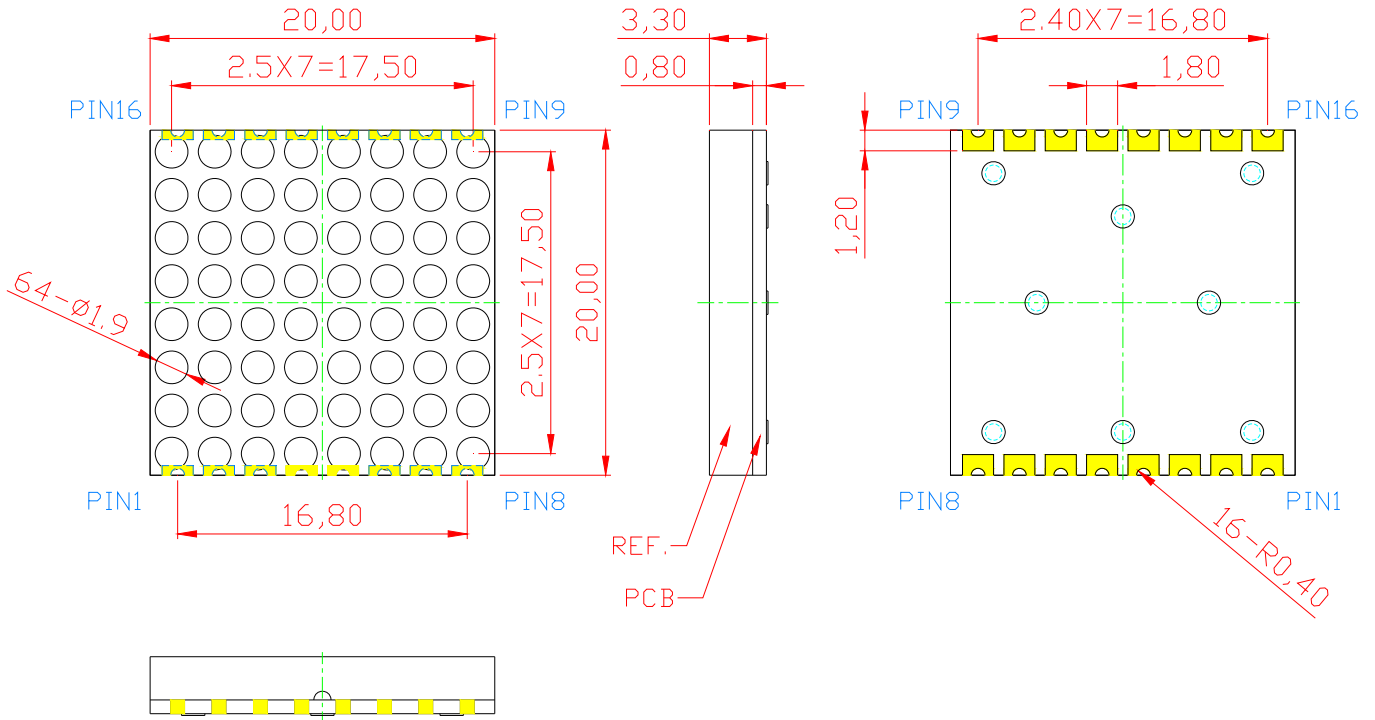


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● MECHANICAL DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are ± 0.25 mm unless otherwise noted.

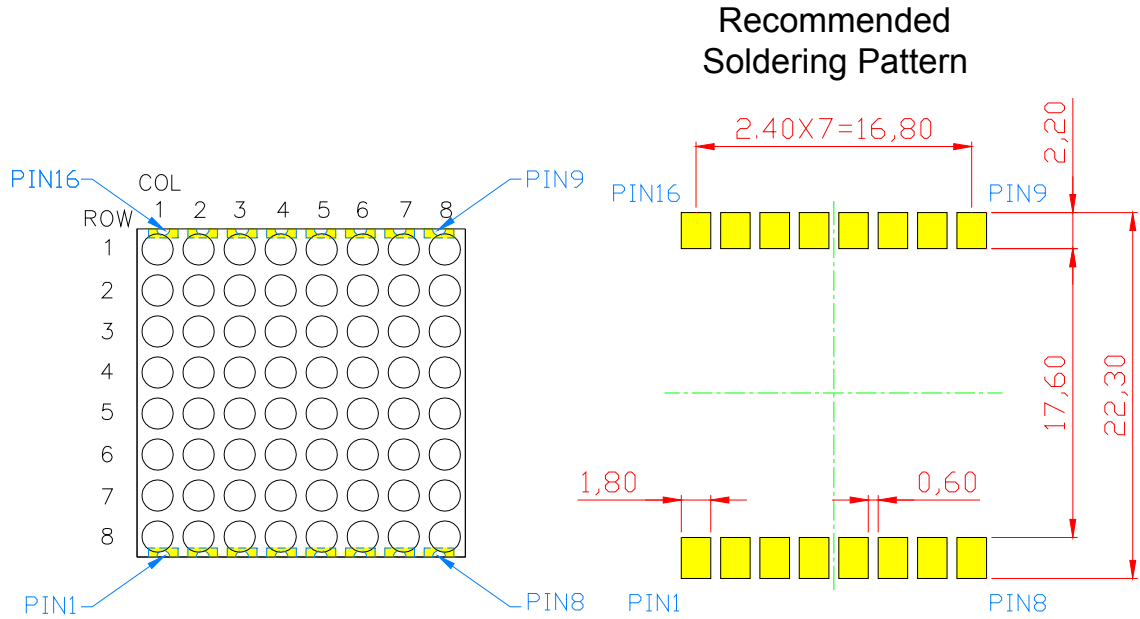


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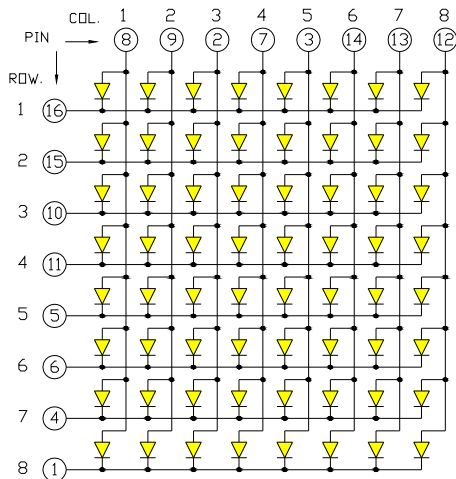
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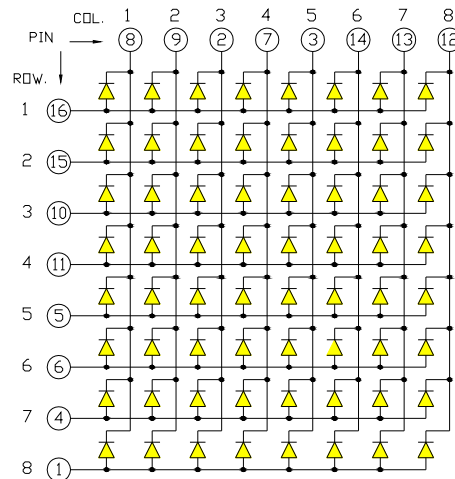
● TYPICAL INTERNAL EQUIVALENT CIRCUIT



OPS-M28810SY
ANODE COLUMN, CATHODE ROW



OPS-M28811SY
CATHODE COLUMN, ANODE ROW



※EMITTED COLOR : SUPER BRIGHT YELLOW



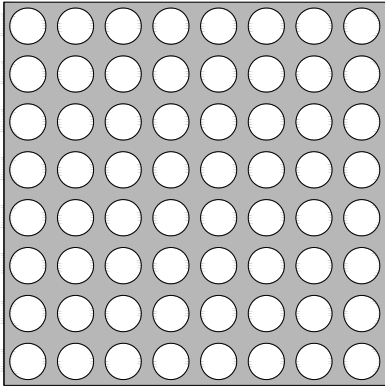
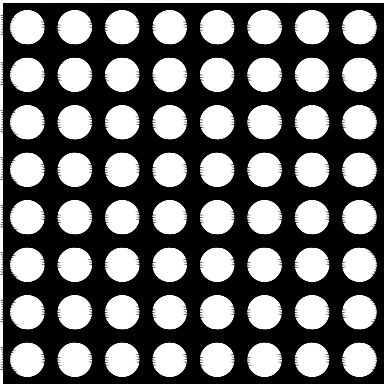
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● PRODUCT APPEARANCE

The most common reflector color and dot color are show in below diagram.

| -GW | -BW |
|--|---|
|  |  |
| ※ REFLECTOR COLOR: Gray ※ DOT COLOR: White | ※ REFLECTOR COLOR: Black ※ DOT COLOR: White |

Opto Plus can customize reflector and dot colors by customer's request. If you have these request please visit www.opledtw.com or contact sales@opledtw.com for more **Standard Product Customization** information.

Part NO. related to reflector and dot colors show as table below.

| PART NO. | DESCRIPTION |
|-----------------|--|
| OPS-M28810SY-GW | Anode Column, Cathode Row Gray face White dot |
| OPS-M28811SY-GW | Cathode Column, Anode Row Gray face White dot |
| OPS-M28810SY-BW | Anode Column, Cathode Row Black face White dot |
| OPS-M28811SY-BW | Cathode Column, Anode Row Black face White dot |



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● **SY: SUPER BRIGHT YELLOW (AlGaInP/GaAs)**

ABSOLUTE MAXIMUM RATING AT Ta=25°C

| Parameter | Symbol | Maximum Rating | Unit |
|--------------------------------------|-----------|----------------|------|
| Power dissipation | P_{AD} | 48 | mW |
| Continuous forward current | I_{AF} | 20 | mA |
| Peak current (duty cycle 1/10, 1kHz) | I_{PF} | 40 | mA |
| Reverse voltage | V_R | 5 | V |
| Operating temperature | T_{OPR} | -40 to +105 | °C |
| Storage temperature | T_{STG} | -40 to +105 | °C |

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

| Characteristic | Symbol | Condition | Min. | Type. | Max. | Unit |
|------------------------------|-----------------|---------------------|------|-------|------|---------------|
| Forward Voltage, (Per Dice) | V_F | $I_F = 20\text{mA}$ | - | 2.1 | 2.4 | V |
| Reverse Current, (Per Dice) | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Peak Wavelength | λ_P | $I_F = 20\text{mA}$ | - | 593 | - | nm |
| Dominant Wavelength | λ_D | $I_F = 20\text{mA}$ | 585 | - | 595 | nm |
| Luminous Intensity | I_V | $I_F = 20\text{mA}$ | 15 | 37 | 60 | mcd |
| Spectral Line Half-Bandwidth | $\Delta\lambda$ | $I_F = 20\text{mA}$ | - | 20 | - | nm |



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● **SY: BIN GRADE (Unit : mcd) 20mA**

| Super Bright Yellow | L | M | N |
|---------------------|-------------|-------------|-------------|
| | 15.0 – 30.0 | 30.1 – 45.0 | 45.1 - 60.0 |

● **SY: HUE GRADE (λ_D : nm)**

| 1 | 2 | 3 |
|---------------|---------------|---------------|
| 585.0 – 588.0 | 588.1 – 592.0 | 592.1 – 595.0 |

● **AVAILABLE BIN / HUE TABLE**

| | | |
|----|----|----|
| L1 | M1 | N1 |
| L2 | M2 | N2 |
| L3 | M3 | N3 |



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● SY: SUPER BRIGHT YELLOW (AlGaInP/GaAs) CURVE

Typical Electro-optical Characteristic Curves
(25 °C Free Air Temperature Unless Otherwise Specified)

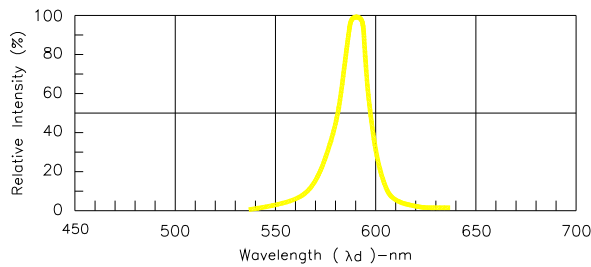


Fig.1-Relative Intensity VS. Wavelength

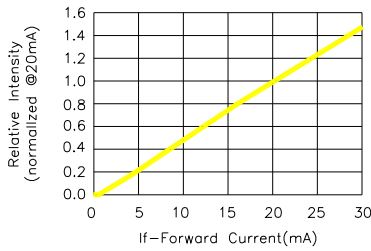


Fig.2-Relative Luminous Intensity vs. Forward Current

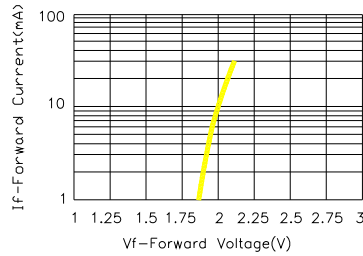


Fig.3-Forward Current vs. Forward Voltage

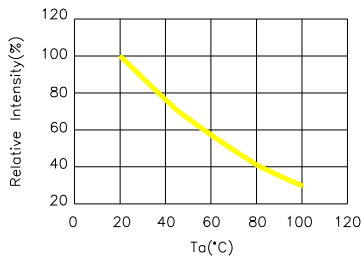


Fig.4-Relative Intensity(@20mA) vs. Ambient Temperature

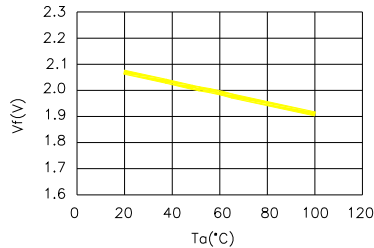


Fig.5-Forward Voltage(@20mA) vs. Ambient Temperature

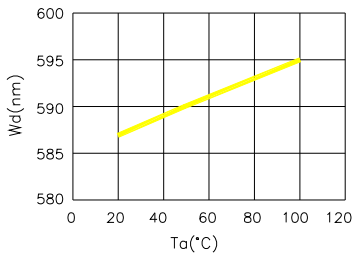


Fig.6-Dominant Wavelength(@20mA) VS. Ambient Temperature

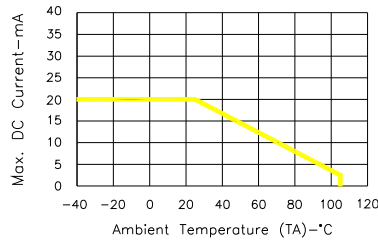


Fig.7-Max. Allowable DC Current VS. Ambient Temperature



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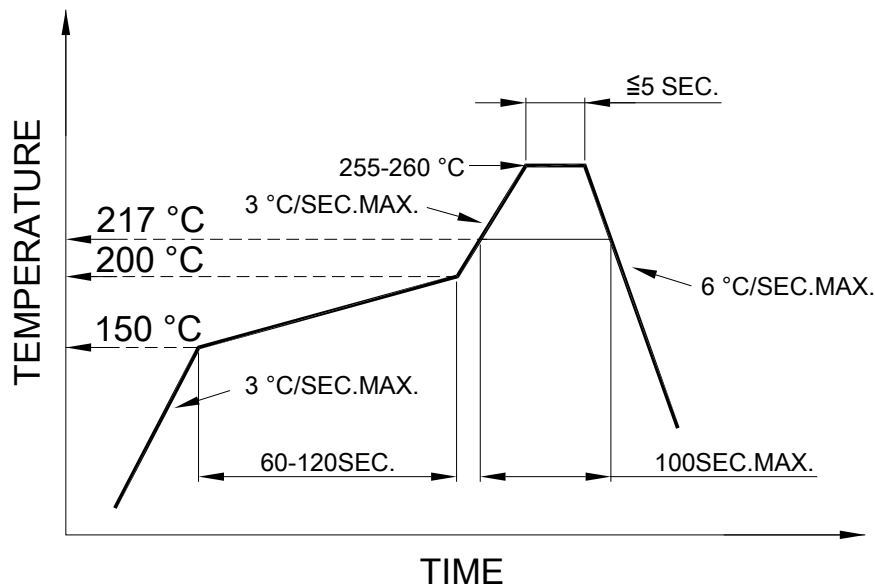
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● SMT REFLOW SOLDERING INSTRUCTIONS

SMT Soldering Profile

Pb free reflow soldering Profile



- We recommend the reflow temperature 245°C (+/- 5°C).
The maximum soldering temperature should be limited to 260°C.
- Number of reflow process shall be 2 times or less.

● SOLDERING IRON

Basic spec is ≤ 4 sec when 260°C. If temperature is higher, time should be shorter (+10°C → 1 sec). Power dissipation of Iron should be smaller than 15W, and temperature should be controllable. Surface temperature of the device should be under 230°C.

● REWORK

- Customer must finish rework within 3 sec. under 350°C.
- The head of soldering iron cannot touch copper foil.

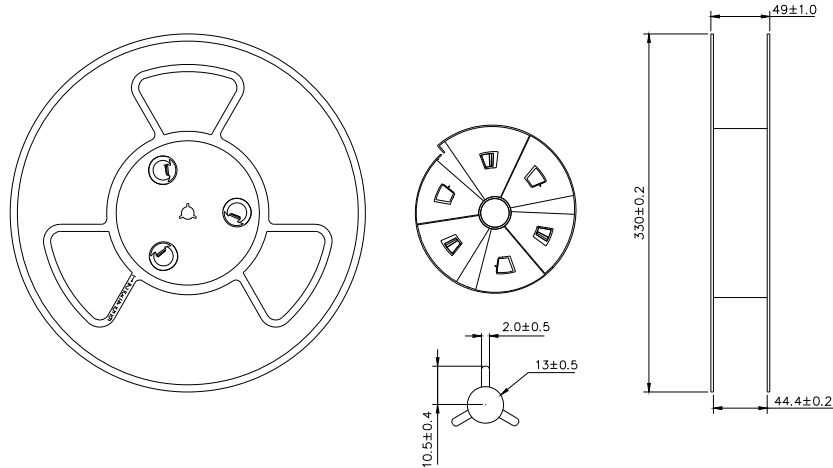


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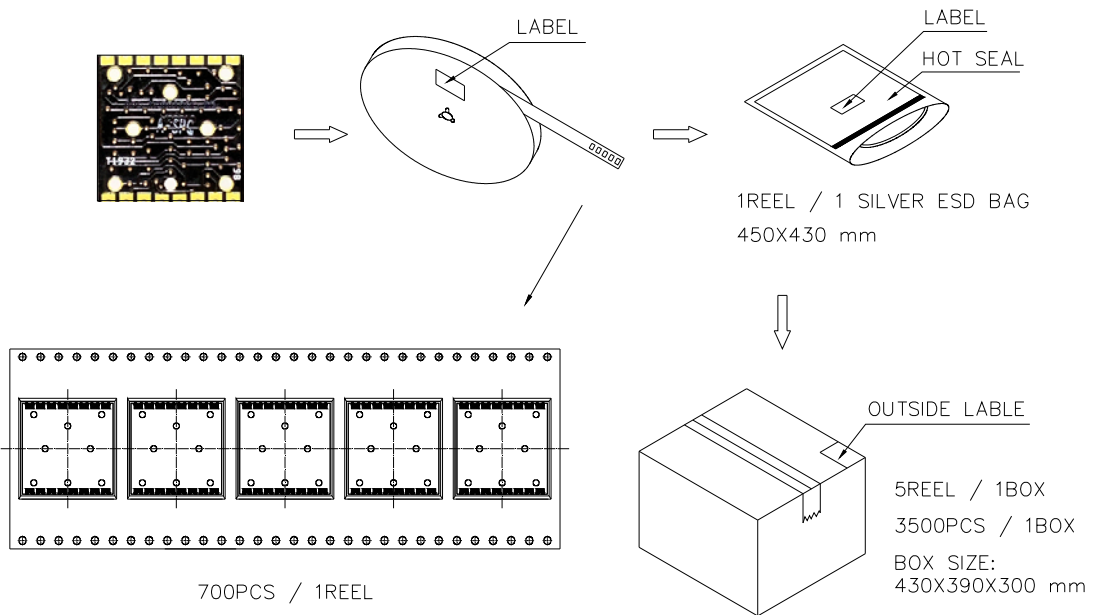
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● REEL DIMENSIONS



● PACKING & LABEL SPECIFICATIONS



● STORAGE CONDITION

In factory original sealed bag package

| TEMPERATURE CONDITION | HUMIDITY CONDITION |
|-----------------------|--------------------|
| 5°C ~ 30°C | Below 60%RH |

After opened and not in factory original sealed bag package

| TEMPERATURE CONDITION | HUMIDITY CONDITION | STORAGE TIME |
|-----------------------|--------------------|----------------------------------|
| 5°C ~ 30°C | Below 60%RH | Within 4 weeks (MSL as level 2a) |